REMARKS

In the office action mailed on December 7, 2006, the Declaration of Jonathan Strange dated September 26, 2006 was considered persuasive as showing that PIN diodes, MESFET transistors and cascade current switches had been well known prior to the filing date of the present application, and that the statement "the connection paths would be hardwired, and the appropriate signal would be chosen by applying a switching voltage or current" was accepted as explaining how the switches operate.

The declaration, however, is alleged to fail to show how the alternative relationships $F_{LO} = F_{OUT} / (1 + m/n)$ and $F_{LO} = F_{OUT} / (1 - m/n)$ would occur as a result of the switching operation. In view of this, the rejection of the claims from the prior office action was maintained. In particular, each of claims 1, 5, 7 - 10, 14, 16 - 19, 21 and 22 was rejected under §102(a) as being anticipated by EP 905879 (to Herzinger et al.), claim 21 was further rejected under 35 U.S.C.§103(a) over Herzinger et al. in view of U.S. Patent No. 6,208,975 (to Damgaard et al.); and claims 2, 3, 11, 12 and 20 are rejected under §103(a) over Herzinger et al. in view of U.S. Patent No. 5,130,670 (to Jaffe).

Applicant submits herewith a Second Declaration of Jonathan Strange that addresses the above alleged shortcomings of the prior declaration. In particular, in the Second Declaration of Jonathan Strange, it is shown that the application on page 6, lines 8 – 19 provides a disclosure that informed one skilled in the art that for GSM mode, $F_{LO} > F_{OUT}$ and the mixer operates with high side injection since the LO frequency is higher than the input frequency (Second Declaration of Jonathan Strange, ¶¶ 8, 9). The Second Declaration further shows that in this GSM case, the output frequency of the mixer is $F_{LO} - F_{OUT}$, and as stated, it follows that the phase clocked loop (feedback) will ensure that the loop operates such that $(F_{LO} - F_{OUT}) / m =$

F_{LO}/n, and therefore, $F_{LO} = F_{OUT} / (1 + m/n)$ (Second Declaration of Jonathan Strange, ¶¶ 8, 9).

The Second Declaration also references the application on page 6, lines 8 – 19 as providing a disclosure that informed one skilled in the art that for DCS, $F_{LO} < F_{OUT}$ and the mixer operates with low side injection since the LO frequency is lower than the input frequency (Second Declaration of Jonathan Strange, ¶¶ 8, 10). The Second Declaration further shows that in this DCS case, the output frequency of the mixer is $F_{OUT} - F_{LO}$, and as stated, it follows that the phase locked loop will ensure that the loop operates such that $(F_{OUT} - F_{LO}) / m = F_{LO} / n$, and therefore, $F_{LO} = F_{OUT} / (1 + m/n)$ (Second Declaration of Jonathan Strange, ¶¶ 8, 10).

The Second Declaration further references that an example of this high and low side injection is provided on page 7, lines 7 – 15 of the application (Second Declaration, ¶11), and that a switching device is disclosed and shown at 100 in Figure 3 (Second Declaration, ¶¶ 12, 13).

Applicant respectfully submits, therefore, that given this disclosure, those skilled in the art in early 1999 would have known that any of the then conventional techniques for providing mode switching could have been employed to achieve the switching between operating modes to provide that $F_{LO} = F_{OUT} / (1 + m/n)$ in a first mode of operation and $F_{LO} = F_{OUT} / (1 - m/n)$ in a second mode of operation (Second Declaration, ¶ 14). As confirmed by Jonathan Strange, the alternative relationships are clearly disclosed since switching is occurring between two VCOs: one where $F_{LO} > F_{OUT}$ and one where $F_{OUT} > F_{LO}$, and the relationships are derived by equating the frequencies at the phase frequency detector (Second Declaration, ¶ 14).

For the reasons stated in prior responses and following the telephone interview on August 22, 2006, claim 1 is submitted to be in condition for allowance. Each of claims 2, 5 and 7 – 9 depends directly or indirectly from claim 1 and is also submitted to be in condition for

allowance.

Independent claim 10 states that the oscillator means produces an output transmission signal responsive to the phase comparator signal using a first voltage controlled oscillator to provide the output transmission signal having a frequency F_{OUT} wherein $F_{LO} = F_{OUT} / (1 + m/n)$ in said first mode of operation and using a second voltage controlled oscillator to provide said output transmission signal having the frequency F_{OUT} wherein $F_{LO} = F_{OUT} / (1 - m/n)$ in said second mode of operation. Claim 10 further requires that the feedback circuitry includes a switching device for switching a feedback path between the first and second voltage controlled oscillators.

Claim 10, therefore, is submitted to be in condition for allowance. Each of claims 11, 12, 14 and 16 - 18 depends directly or indirectly from claim 10 and further limits the subject matter thereof. Each of claims 10 - 12, 14 and 16 - 18 is therefore submitted to be in condition for allowance.

Independent claim 19 states that the feedback circuitry includes a switching device for switching between the first mode of operation and the second mode of operation. Claim 19, therefore, is also submitted to be in condition for allowance. Claim 20 depends from claim 19 and is also submitted to be in condition for allowance.

Each of claims 1 - 3, 5, 7 - 12, 14 and 16 - 22, therefore, is in condition for allowance.

Favorable action consistent with the above is respectfully requested.

Respectfully submitted,

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